
वस्त्रादि — हथकरघा निर्मित
वर्स्टेड बंटिंग कपड़ा — विशिष्टि
(दूसरा पुनरीक्षण)

**Textiles — Handloom Worsted
Bunting Cloth — Specification**
(Second Revision)

ICS 59.080.30

© BIS 2023



भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS
मानक भवन, 9 बहादुर शाह ज़फर मार्ग, नई दिल्ली - 110002
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI - 110002
www.bis.gov.in www.standardsbis.in

FOREWORD

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Handloom and Khadi Sectional Committee had been approved by the Textiles Division Council.

Bunting cloth is intended for making different flags used by the Ministry of Defence as well as for signalling flags used by the Railways.

This standard was originally published in 1957 and was subsequently revised in 1991. The standard has again been revised to incorporate the following major changes:

- a) Method of test for count of yarn along with its tolerance has been specified;
- b) Tolerances for ends/dm, picks/dm and mass have been modified;
- c) Test method for identification of material has been incorporated;
- d) Sampling plan has been updated;
- e) BIS certification marking clause has been modified; and
- f) References to Indian Standards have been updated.

The composition of the Committee responsible for the formulation of this standard is given in Annex E.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 2022 'Rules for rounding off numerical values (*second revision*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

*Indian Standard***TEXTILES — HANDLOOM WORSTED BUNTING
CLOTH — SPECIFICATION***(Second Revision)***1 SCOPE**

1.1 This standard prescribes constructional particulars and other requirements for two varieties of handloom worsted bunting cloth.

1.2 This standard does not specify general appearance, feel, etc of the cloth.

2 REFERENCES

The standards listed in Annex A contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent edition of these standards.

3 ATMOSPHERIC CONDITIONS FOR TESTING

Test specimens may be conditioned and tested in the prevailing atmosphere for determining the conformity of the cloth to this standard. However, in all cases of disputes, the specimens shall be conditioned and tested in the standard atmosphere as specified in the referred Indian Standards on test methods.

4 MANUFACTURE**4.1 Yarn**

4.1.1 The yarn used in the manufacture of the cloth shall be free from admixture of non-woollen fibre and shall be such that the cloth produced complies with the requirements of this standard.

4.1.2 The approximate count of the yarn is given in Table 1 for guidance.

4.2 Cloth

4.2.1 The cloth shall be in plain weave.

4.2.2 It shall be scoured and shall be free from grease, soap filling or any other admixture which would give it fictitious weight, substance or firmness.

4.2.3 It shall have a lightly milled finish.

5 REQUIREMENTS

5.1 The cloth shall conform to the requirements

specified in Table 1.

5.2 The cloth shall also conform to the requirements specified in Table 2.

5.3 Dimensions

The length and width of the cloth, when determined in accordance with IS 1954, shall be as agreed to between the buyer and the seller or as declared by the seller subject to the tolerances specified in the Government of India, Ministry of Commerce and Industry Notification No. S.O. 2937 dotted 20 September 1962 issued under the *Trade and Merchandise Marks Act, 1958* (43 of 1958) (see Annex B).

5.4 Sealed Sample

If in order to illustrate or specify the indeterminable characteristics, such as general appearance, feel and shade, a sample has been agreed upon and sealed, the supply shall be in conformity with the sample in such respects.

The custody of the sealed sample shall be a matter of prior agreement between the buyer and the seller.

6 INSPECTION

6.1 The cloth when visually inspected should be free from the major flaws listed in Annex D.

6.2 The number of permissible major flaws per unit length shall be as agreed to between the buyer and the seller.

7 SAMPLING**7.1 Lot**

The quantity of cloth delivered to one buyer against one despatch note shall constitute a lot.

7.2 The conformity of a lot to the various requirements specified in the standard shall be determined on the basis of tests carried out on the samples selected from it.

7.3 Unless otherwise agreed, the number of pieces to be selected at random for inspection shall be in accordance with Table 3. For random selection of samples, the IS 4905 may be followed.

**Table 1 Constructional Particulars and Breaking Load Requirements for
Handloom Worsted Bunting Cloth**

(Clauses 4.1.2 and 5.1)

Sl No.	Variety No.	Approximate Count of Yarn : Universal Count (Worsted Count)		Ends/dm	Picks/dm	Mass g/m ²	Breaking Load on 15 cm × 20 cm Strips	
		Warp	Weft				N	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
i)	1	40 tex × 2 (2/22s)	40 tex × 2 (2/22s)	120	120	200	784	784
ii)	2	32 tex × 2 (2/28s)	40 tex (22s)	130	140	145	640	442
iii)	Tolerance, Percent	± 5	± 5	± 5	± 5	± 5	- 5 on Average value and - 15 on individual reading	
iv)	Method of Test, Ref to	IS 3442		IS 1963		IS 1964 or Annex C	IS 1969 (Part 1)	

Table 2 Other Requirements for Handloom Worsted Bunting Cloth

(Clause 5.2)

Sl No.	Characteristic	Requirement	Method of Test, Ref to
(1)	(2)	(3)	(4)
i)	Relaxation shrinkage, percent, <i>Max</i>	5	IS 665
ii)	<i>pH</i> value of the aqueous extract	5.0 to 7.5	IS 1390
iii)	Fibre composition, <i>Min</i>	97 percent wool	IS 2006
iii)	Colour fastness: a) Light b) Washing Test (2): 1) Change in colour 2) Staining on fabric c) Sea Water: 1) Change in colour 2) Staining on fabric	5 or better 4 or better 4 or better 4 or better 4 or better	IS/ISO 105-B01 or IS/ISO 105-B02 IS/ISO 105-C10 IS/ISO 105-E02

Table 3 Sample Size and Permissible Number of Non-conforming Pieces

(Clause 7.3)

Sl No.	Lot Size	Sample Size	Permissible Number of Non-conforming Pieces	Sub-sample Size
(1)	(2)	(3)	(4)	(5)
i)	Up to 90	5	0	3
ii)	91 to 150	8	0	3
iii)	151 to 500	13	1	5
iv)	501 to 1200	20	1	5
v)	1 201 to 10 000	32	2	8
vi)	10 001 to 35 000	50	3	8
vii)	35 001 to 500 000	80	5	13
viii)	500 001 and above	125	7	13

7.4 Number of Samples and Criteria for Conformity

The number of samples to be drawn and the criteria for conformity of the material for various characteristics shall be as follows:

Sl No.	Characteristics	Number of Samples	Criteria for Conformity
(1)	(2)	(3)	(4)
i)	Ends, picks, mass, length, width and visual inspection	According to col (2) of Table 3	Number of nonconforming pieces shall not exceed the corresponding number given in col (3) of Table 3.
ii)	Relaxation shrinkage, pH value, colour fastness, fibre composition and breaking load	According to col (4) of Table 3	All the test pieces shall meet the requirement

8 MARKING

8.1 The cloth shall be suitably marked with the following information:

- Name of the material and variety number;
- Length (m) and width (cm);
- Variety and GSM (g/m²);
- Indication of the source of manufacture; and
- Other declarations as per law in force.

8.2 BIS Certification Marking

The product(s) conforming to the requirements of

this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act, 2016* and the Rules and Regulations framed thereunder, and the products may be marked with the Standard Mark.

9 PACKING

Unless otherwise agreed upon by the buyer and seller, the cloth shall be packed in bales or cases in accordance with the procedure laid down in IS 32 or IS 741.

ANNEX A

(Clause 2)

LIST OF REFERRED STANDARDS

<i>IS No.</i>	<i>Title</i>	<i>IS No.</i>	<i>Title</i>
IS 32 : 2023	Code for seaworthy packaging of woollen and worsted yarn and cloth (<i>third revision</i>)		force using the strip method (<i>fourth revision</i>)
IS 665 : 1989	Textiles — Determination of dimensional changes of fabrics containing wool on soaking in water (<i>first revision</i>)	IS 2006 : 1988	Method for quantitative chemical analysis of binary mixtures of protein fibre with certain other non-protein fibres (<i>second revision</i>)
IS 741 : 1971	Code for inland packaging of woollen and worsted yarn and cloth (<i>first revision</i>)	IS 3442 : 2023	Textiles — Method for determination of crimp and linear density of yarn removed from fabric (<i>second revision</i>)
IS 1390 : 2022/ ISO 3071 : 2020	Textiles — Determination of pH of aqueous extract (<i>third revision</i>)	IS 4905 : 2015/ ISO 24153 : 2009	Random sampling and randomization procedures (<i>first revision</i>)
IS 1954 : 1990	Determination of length and width of woven fabrics — Methods (<i>second revision</i>)	IS/ISO 105-B01 : 2014	Textiles — Tests for colour fastness: Part B01 Colour fastness to light: Daylight
IS 1963 : 1981	Methods for determination of threads per unit length in woven fabrics (<i>second revision</i>)	IS/ISO 105-B02 : 2014	Textiles — Tests for colour fastness: Part B02 Colour fastness to artificial light: Xenon arc fading lamp test
IS 1964 : 2001	Textiles — Methods for determination of mass per unit length and mass per unit area of fabrics (<i>second revision</i>)	IS/ISO 105-C10 : 2006	Textiles — Tests for colour fastness: Part C10 Colour fastness to washing with soap or soap and soda
IS 1969 (Part 1) : 2018/ISO 13934-1 : 2013	Textiles — Tensile properties of fabrics: Part 1 Determination of maximum force and elongation at maximum	IS/ISO 105-E02 : 2013	Textile — Tests for colour fastness: Part E02 Colour fastness to sea water (<i>first revision</i>)

ANNEX B*(Clause 5.3)***EXTRACTS FROM THE GOVERNMENT OF INDIA, MINISTRY OF COMMERCE AND
INDUSTRY (TRADE AND MERCHANDISE MARKS) NOTIFICATION NO. S.O. 2937
DATED 20 SEPTEMBER 1962**

B-1 A trade description of length stamped on worsted woollen and shoddy piece goods:

- a) The actual length of the piece shall not be less than the stamped length.

B-2 A trade description of width stamped on worsted woollen and shoddy piece goods:

- a) In pieces of worsted fabric, the stamped width shall not be greater or less than the actual width, provided that the variation in

width at any point is not more than 2 percent and on average not more than 1.5 percent; and

- b) In pieces of woollen and shoddy piece goods, the stamped width shall not be greater or less than the actual width, provided that the variation in width at any point is not more than 3 percent and on average not more than 2 percent.

ANNEX C*(Table 1)***METHOD FOR DETERMINATION OF MASS OF FABRIC**

C-1 Cut four specimens of 100 mm × 100 mm each from a sample. Condition all the specimens in a desiccator charged with saturated solution of sodium nitrate at 27 °C ± 2 °C for a period of 24 hours. Remove all the specimens from the desiccator and

immediately determine their collective mass in a weighing balance to the nearest milligram.

C-2 Calculate the mass of the fabric in g/m².

ANNEX D

(Clause 6.1)

LIST OF MAJOR FLAWS

- a) One or more ends missing in the body of the material throughout its length, more than three ends missing at a place and running over 60 cm, or prominently noticeable double end running throughout the piece;
- b) Undressed Snarls noticeable over a length exceeding 5 percent of the length of the piece;
- c) Smash definitely rupturing the texture of the fabric;
- d) Hole, cut or tear;
- e) Reed marks prominently noticeable over a length exceeding 5 percent of the length of the piece;
- f) Defective or damaged selvedge noticeable over a length exceeding 5 percent of the length of the piece;
- g) Skewing of more than three percent on weft;
- h) Weft crack or two or more missing picks across the width of the fabric;
- j) Warp or weft bar due to the difference in raw material, count, twist, lustre, colour, shade or spacing of adjacent groups of yarns (starting mark);
- k) More than two adjacent ends running parallel broken or missing and extending beyond 10 cm;
- m) Noticeable warp or weft float in the body of the fabric;
- n) Noticeable oil or other stain in the fabric;
- p) Oily weft in the fabric;
- q) Prominently noticeable slub;
- r) Conspicuous broken pattern;
- s) Gout due to foreign matter, usually lint or waste woven into the fabric;
- t) Prominent selvedge defect;
- u) Significant shading or listing in fabrics having a gradual change in tone or depth of shade of fabric (excluding selvedge or border running parallel to the selvedge);
- v) Coloured flecks;
- w) Blurred or dark patch;
- y) Patchy, steaky or uneven dyeing;
- z) Dye bar; and
- aa) Fuzzy appearance.

ANNEX E

(Foreword)

COMMITTEE COMPOSITION

Handloom and Khadi Sectional Committee, TXD 08

<i>Organization</i>	<i>Representative(s)</i>
Weavers Service Centre, Delhi	SHRI VISHESH NAUTIYAL (Chairperson) SHRI VIKAS KUMAR (<i>Alternate</i>)
Baster Adimjati Sewak Sangh, Baster	SHRI SUMIT DAS SHRI AMIT DAS (<i>Alternate</i>)
Central Pollution Control Board, New Delhi	SHRI P. K. MISHRA SHRI RISHABH SRIVASTAV (<i>Alternate</i>)
Central Reserve Police Force, New Delhi	SHRI D. P. UPADHYAY SHRI SANJEEV KUMAR SINGH (<i>Alternate</i>)
Department of Handlooms & Textiles, Chennai	SHRI T. P. RAJESH DR K. KARNAN (<i>Alternate</i>)
Gandhigram Rural Institute, Dindigul	REPRESENTATIVE
Haryana Khadi Gramodyog Sangh, Karnal	SHRI PAWAN GARG SHRI R. S. YADAV (<i>Alternate</i>)
ICAR – Central Institute for Research on Cotton Technology, Mumbai	DR SUJATA SAXENA DR A. S. M. RAJA (<i>Alternate</i>)
Indian Institute of Handloom Technology, Varanasi	DR P. THENNARASU
Indian Institute of Handloom Technology, Jodhpur	DR J. SIVAGNANAM
Indo Tibetan Border Police, New Delhi	SHRI UTTAM KUMAR SHRI ANAND KUMAR (<i>Alternate</i>)
Jan Sewa Ashram, Aligarh	SHRI R. K. SHARMA SHRI AKHILESH KUMAR AWASTHI (<i>Alternate</i>)
Karnatka Khadi Gramodyog Samyuktha Sangha, Hubli	SHRI K. V. PATTAR SHRI SHIVANANDA S. (<i>Alternate</i>)
Khadi & Village Industries Commission, New Delhi	SHRI P. NALLAMUTHU SHRI RAM NARAYAN (<i>Alternate</i>)
Khadi Dyers & Printers, Mumbai	SHRI D. N. BHATT SHRI V. D. JOSHI (<i>Alternate</i>)
Khadi Gramodyog Mandal, Rampur	SHRI RAKESH CHAUDHARY SHRI PRINCE CHAUDHARY (<i>Alternate</i>)
Kshetriya Khadi Gramodyog Samiti, Dausa	SHRI R. K. SINGH
Madhya Bharat Khadi Sangh, Gwalior	SHRIMATI NEELU MEKLE SHRI HARISH MEKLE (<i>Alternate</i>)
Mahatma Gandhi Institute for Rural Industrialization, Wardha	REPRESENTATIVE

<i>Organization</i>	<i>Representative(s)</i>
Metpalli Khadi Gramodyog Pratisthan, Metpalli	SHRI G. MADHAV
Ministries of Defence (DGQA), New Delhi	SHRI ARVIND COMPATHANE SHRI N. SENTHIL KUMAR (<i>Alternate</i>)
Ministries of Health, New Delhi	REPRESENTATIVE
National Handloom Development Corporation Ltd, Gautam Budh Nagar	DR SAKTHIVEL PERUMALSAMY SHRI JITENDRA TOLAMBIYA (<i>Alternate</i>)
Northern Railways, New Delhi	SHRI SUDHANSHU KUMAR GUPTA
Northern India Textile Research Association, Ghaziabad	DR M. S. PARMAR SHRI SANJEEV SHUKLA (<i>Alternate</i>)
Office of The Development Commissioner for Handlooms, New Delhi	SHRI SIDDHARTH SINGH SHRI VINAY KUMAR (<i>Alternate</i>)
Rastriya Khadi Gramodyog Federation, Moradabad	SHRI ANIL KUMAR SINGH SHRI KULDEEP SINGH (<i>Alternate</i>)
Sushil Gramodyog Sanstha, Ghaziabad	SHRI SUNIL TYAGI
Swastik Gramodyog Samiti, Delhi	SHRI M. L. PATHAK SHRI ABHISHEK DIXIT (<i>Alternate</i>)
Textiles Committee, New Delhi	SHRI KARTIKAY DHANDA SHRIMATI SHILPI CHAUHAN (<i>Alternate</i>)
The Cotton Textiles Export Promotion Council (TEXPROCIL), Mumbai	DR SIDDHARTHA RAJAGOPAL SHRI RAJESH SATAM (<i>Alternate</i>)
The Handloom Export Promotion Council, Chennai	DR M. SUNDAR EXPORT PROMOTION OFFICER (<i>Alternate</i>)
The Tamil Nadu Handloom Weavers' Cooperative Society Ltd, Chennai	SHRI T. N. VENKATESH SHRI K. KATHIRESAN (<i>Alternate</i>)
In Personal Capacity (148, II Floor, Sector 8, Faridabad, 121006)	SHRI B. B. PAUL
BIS Directorate General	SHRI J. K. GUPTA, SCIENTIST 'E'/DIRECTOR AND HEAD (TEXTILES) [REPRESENTING DIRECTOR GENERAL (<i>Ex-officio</i>)]

Member Secretary
SHRI SWAPNIL
SCIENTIST 'B'/ASSISTANT DIRECTOR
(TEXTILES), BIS

Bureau of Indian Standards

BIS is a statutory institution established under the *Bureau of Indian Standards Act, 2016* to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

Copyright

BIS has the copyright of all its publications. No part of these publications may be reproduced in any form without the prior permission in writing of BIS. This does not preclude the free use, in the course of implementing the standard, of necessary details, such as symbols and sizes, type or grade designations. Enquiries relating to copyright be addressed to the Head (Publication & Sales), BIS.

Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the website- www.bis.gov.in or www.standardsbis.in.

This Indian Standard has been developed from Doc No.: TXD 08 (21109).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

BUREAU OF INDIAN STANDARDS

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002

Telephones: 2323 0131, 2323 3375, 2323 9402

Website: www.bis.gov.in

Regional Offices:

	Telephones
Central : 601/A, Konnectus Tower -1, 6 th Floor, DMRC Building, Bhavbhuti Marg, New Delhi 110002	{ 2323 7617
Eastern : 8 th Floor, Plot No 7/7 & 7/8, CP Block, Sector V, Salt Lake, Kolkata, West Bengal 700091	{ 2367 0012 2320 9474
Northern : Plot No. 4-A, Sector 27-B, Madhya Marg, Chandigarh 160019	{ 265 9930
Southern : C.I.T. Campus, IV Cross Road, Taramani, Chennai 600113	{ 2254 1442 2254 1216
Western : Plot No. E-9, Road No.-8, MIDC, Andheri (East), Mumbai 400093	{ 2821 8093

Branches : AHMEDABAD. BENGALURU. BHOPAL. BHUBANESHWAR. CHANDIGARH. CHENNAI. COIMBATORE. DEHRADUN. DELHI. FARIDABAD. GHAZIABAD. GUWAHATI. HIMACHAL PRADESH. HUBLI. HYDERABAD. JAIPUR. JAMMU & KASHMIR. JAMSHEDPUR. KOCHI. KOLKATA. LUCKNOW. MADURAI. MUMBAI. NAGPUR. NOIDA. PANIPAT. PATNA. PUNE. RAIPUR. RAJKOT. SURAT. VISAKHAPATNAM.